

# LED RETROFIT CONVERSION KITS

Engineered Products Company's LED RetroFit Conversion Kits convert older 4-foot and 8-foot T8 or T12 "strip-type" fixtures into energy efficient LED luminaires.

- High quality components and attractive design makes the retrofit look like a new LED luminaire at a fraction of the cost.
- Improves the quality, integrity, and sustainability of your lighting system.
- A complete, low-cost LED lighting upgrade solution to reduce energy consumption and improve energy management.
- Delivers high performance lumen output; no need to purchase a new LED luminaire.
- Provides the contractor with ultimate "installation" flexibility.
- The retrofit is fast and easy regardless of "strip-type" fixture brand.

## BENEFITS

- ETL Listed to UL Standard 1598C.
- DLC Listed and approved (standard wattage driver only).
- Reduced energy consumption compared to fluorescent lighting systems.
- High system efficacy.
- 100% Tested and certified before shipping ensures out of the box performance.
- Assembled in the United States.
- Five (5) Year Warranty. 50,000 hours, minimum at  $L_{70}$ .
- Minimal part numbers. Other companies require separate part numbers for various "strip-type" fixture housing widths.

## FEATURES

- One-piece construction, compact design, trouble free installation.
- Integral "adjustable" installation brackets accommodate 4.25" (107.95mm) or 5.0" (127mm) "strip-type" fixture housing widths.
- Multi-Voltage Operation - 120/277V input.
- Pre-wired at the factory for 0-10V dimming.
- Available in 4000K and 5000K color temperatures.
- Color Rendering Index (CRI): 80+
- Available in two (2) or three (3) T8 fluorescent lamp equivalent (see the LED RetroFit Conversion Kit Configuration Example Using an LED Strip on Page 3).
- Kits are available with or without frosted diffuser lens to meet your application needs.



LED RETROFIT CONVERSION KIT  
(STRIP LED OR T8 LED TUBES)

## TYPICAL APPLICATIONS:

- Commercial Facilities
- Industrial Facilities
- Storage Rooms
- Warehouses
- Retail Stores
- And more...



Specifications subject to change without prior notice.

[www.engproducts.com](http://www.engproducts.com)

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**ENGINEERED  
PRODUCTS CO.**

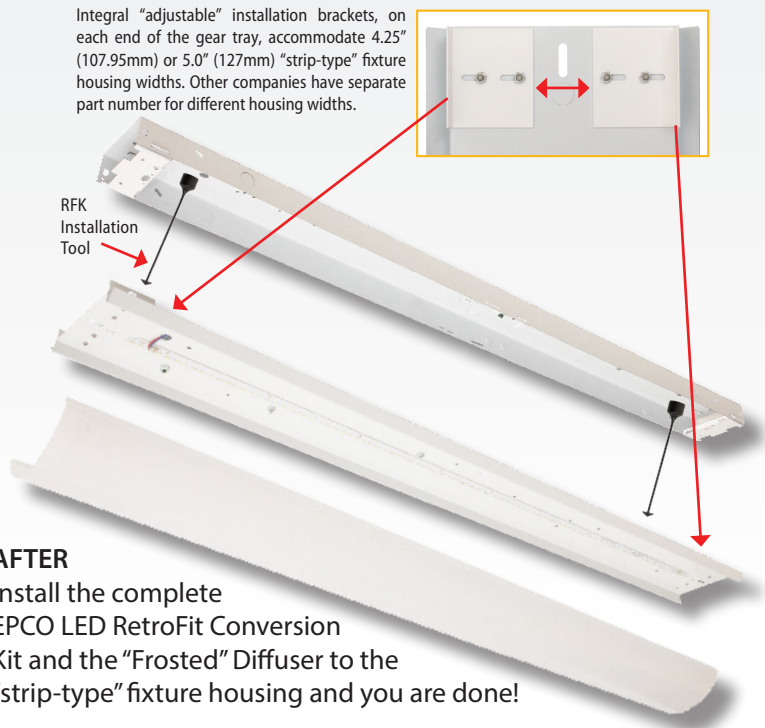
# LED RETROFIT CONVERSION KITS

## RETROFITTING WITH THE LED RETROFIT CONVERSION KIT



### BEFORE

Remove and recycle the fluorescent lamps, ballast cover, lamp holders and ballast from the "strip-type" fixture housing.



### AFTER

Install the complete EPCO LED RetroFit Conversion Kit and the "Frosted" Diffuser to the "strip-type" fixture housing and you are done!

## ACCESSORY/OPTIONS

**RFK Installation Tool:** The RFK Series Installation Kit includes two (2) "labor and time saving" magnetic suspension devices used to expedite installation of the gear tray. Supports one man installation, even when installing 8-foot fixtures.

The "round" magnetic end of the tool is attached to the outer ends of the strip fixture housing. The "arrowed" end of the tool is inserted through the slotted holes on each end of the retrofit gear tray, then rotated 90 degrees to hold the gear tray in place while the contractor completes termination of the supply wires to the gear tray.

100% reusable for multiple installation projects, the tool eliminates the use of string, tie wire, nylon straps, or other temporary suspension methods.

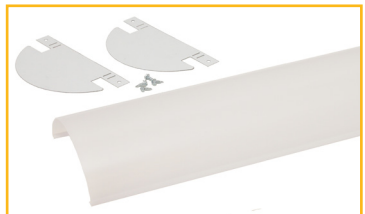
**Diffuser:** The one-piece, "snap-on" polycarbonate UV stabilized frosted diffuser features 2.25" (57.15 mm) high contoured shape design that provides even lumen distribution without glare, shadows, or hot spots. Includes two (2) end caps with screws.

- The edges of the diffuser in conjunction with the end caps assure a solid attachment to luminaire's housing with minimal light leakage.
- The diffuser is easily removable for maintenance or cleaning.

**Emergency LED Backup Driver:** Meets life safety code requirements for Emergency Illumination; provides at least 90 minutes of emergency lighting.

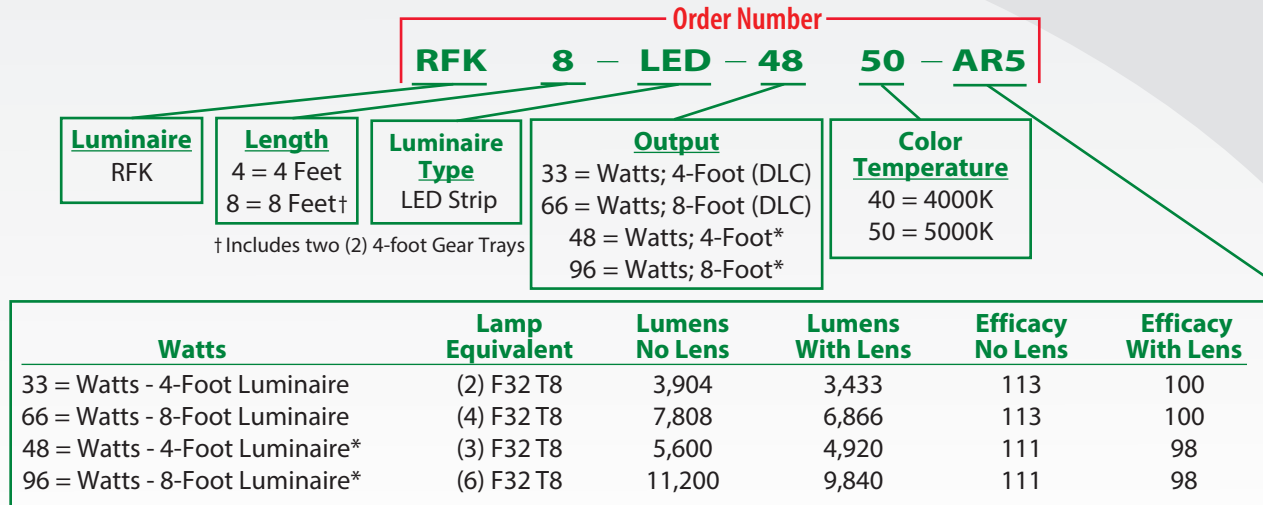
**Sensors:** Utilizing occupancy sensors can provide automatic energy savings up to 70%. EPCO microwave occupancy sensors are suitable for low occupancy applications, including parking garage egress areas, building stairwells, warehouses and storage facilities.

- Designed for 15-foot ceilings or lower.
- Provides bi-level lighting automatically (See Options R5 and R6 in the configuration example shown on Page 3).
- Reduces lighting energy costs up to 50% or more with low-level illumination when spaces are not occupied.
- Automatically switches to full illumination when the sensor detects motion.
- Adjustable time delay and daylight harvesting capability. The frosted diffuser is easily removable to provide convenient access to the sensor for adjustment.



Specifications subject to change without prior notice.

## LED RETROFIT CONVERSION KIT CONFIGURATION EXAMPLE USING AN LED STRIP



\*Indicates High Wattage LED Driver

The LED RetroFit Conversion Kit Luminaire can be built to your specifications by adding the respective option codes as "part" of your order number.

**Note:**

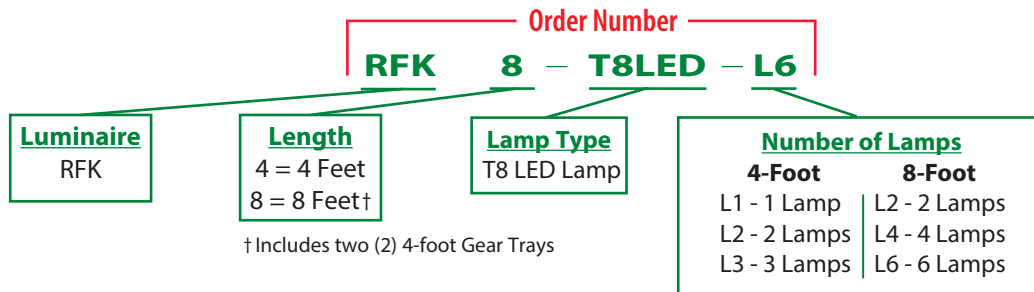
1. The "Frosted Diffuser" is an option for all LED RetroFit Conversion Kits and is strongly recommended for ceiling heights less than 15-feet.
2. Two (2) "End Caps" are included with the Diffuser.
3. The Frosted Diffuser for an 8-foot "strip-type" luminaire includes two (2) 4-foot diffusers and two (2) Tinnerman® Clips joined at the outside bottom edges of the diffuser.
4. The "Optional" LED Battery Backup Driver provides 90 minutes of power to the luminaire if line power is lost.
5. Optional Microwave Sensors (R4, R5, and R6) are suitable for ceiling heights less than 15-feet.

### LED RetroFit Conversion Kit Options

- A.** 4-Foot Frosted Diffuser with End Caps  
*(See Notes 1 and 2)*
- E.** Emergency LED Backup Driver  
*(non-stock; long lead time)*
- R4.** Microwave Occupancy Sensor *(On/Off Only)*
- R5.** Microwave Occupancy Sensor  
*(0-10V Dimming at 30%)*
- R6.** Microwave Occupancy Sensor  
*(0-10V Dimming at 50%)*
- Z.** Bulk Packaging *(25 or 50 per skid. Contact EPCO Inside Sales)*

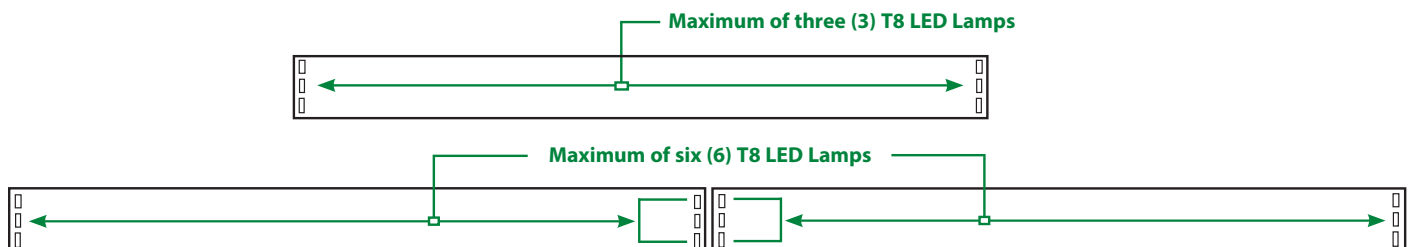
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## LED RETROFIT CONVERSION KIT CONFIGURATION EXAMPLE USING T8 LED LAMPS



**Note:**

1. LED RetroFit Kits do not include T8 LED Lamps. T8 LED Lamps are Customer supplied.
2. The illustration below shows a "top down" view of the 4-foot and 8-foot T8 LED RetroFit Kit Series Gear Trays.



Specifications subject to change without prior notice.

# LED RETROFIT CONVERSION KITS

## LED DRIVER SPECIFICATIONS

Electrical Specifications	Standard Wattage* - 4FT	High Wattage - 4FT
Input Voltage	120 - 277 VAC	120 - 277 VAC
Input Frequency	60/50 Hz	60/50 Hz
Power Factor	> 0.9 @ Full Load; 120 through 277V	> 0.9 @ Full Load; 120 through 277V
Inrush Current	20 Amps @ 230 Volts	10.3 Amps @ 120 Volts; 17.5 Amps @ 277 Volts
Input Power	33-Watts	48-Watts
Total Harmonic Distortion	20% or less	20% or less
Protection	Overvoltage, Over Current and Short Circuit	Overvoltage, Over Current and Short Circuit
Dimming Capability	10% of Total Output Power	10% of Total Output Power
Environmental Specifications		
Operating Temperature	-4°F (-20°C) to 122°F (50°C)	-4°F (-20°C) to 122°F (50°C)
Operating Temperature with Battery Back Up	0°F (-18°C) to 113°F (45°C)	0°F (-18°C) to 113°F (45°C)
Applications	Damp and Dry Locations	Damp and Dry Locations
Certifications		
Underwriters Laboratories (UL)	UL 8750	UL 8750
FCC Part 15	Class B Consumer Limits	Class A Non-Consumer Limits

\* DLC Listed and Approved.

## CASE STUDY - LIGHT LEVELS FOR EPCO PRODUCTION AND PACKAGING AREA

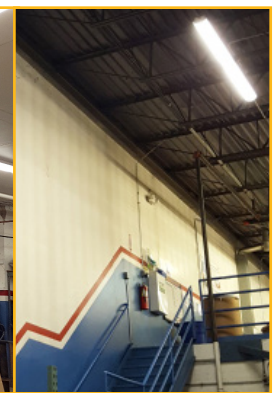
Location	Pre-Retrofit	Post-Retrofit (with Lens)	Change
Fixture Whip Table	8.3 FC	9.0 FC	8% Increase
Floor	9.1	8.3	33% increase
AC Whip Assembly Table #1	8.0	9.3	16% Increase
AC Whip Assembly Table #2	7.6	8.6	13% Increase
Stairs	3.0	6.2	200% Increase



Fixture Whip Table



AC Whip Assembly Table



Stairs

Specifications subject to change without prior notice.



## LED RETROFIT CONVERSION KIT PART NUMBERS

Catalog Number	UPC Number	Description	Order Unit	Order Qty	Unit Pkg	Units/ Case	TL Case Qty	Min Order Qty	MM Req	Ship Wt (Lbs)
<b>LED RetroFit Conversion Kits LED Strip</b>										
RFK4-LED-3340	14036	LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, 33-Watts 4000K, Adjustable Width: 4.25" to 5".	EA	1	BX	6	6	6	Yes	26
RFK4-LED-3340-A	14037	LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, 33-Watts 4000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
RFK4-LED-3350	14034	LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, 33-Watts 5000K, Adjustable Width: 4.25" to 5".	EA	1	BX	6	6	6	Yes	26
RFK4-LED-3350-A	14035	LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, 33-Watts 5000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
RFK4-LED-4840	14006	LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, 48-Watts 4000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
RFK4-LED-4840-A	14007	LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, 48-Watts 4000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
RFK4-LED-4850	14004	LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, 48-Watts 5000K, Adjustable Width: 4.25" to 5".	EA	1	BX	6	6	6	Yes	26
RFK4-LED-4850-A	14005	LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, 48-Watts 5000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
RFK8-LED-6640	14030	LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, 66-Watts 4000K, Adjustable Width: 4.25" to 5".	EA	1	BX	6	6	6	Yes	26
RFK8-LED-6640-A	14031	LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, 66-Watts 4000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
RFK8-LED-6650	14032	LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, 66-Watts 5000K, Adjustable Width: 4.25" to 5".	EA	1	BX	6	6	6	Yes	26
RFK8-LED-6650-A	14033	LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, 66-Watts 5000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
RFK8-LED-9640	14028	LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, 96-Watts 4000K, Adjustable Width: 4.25" to 5".	EA	1	BX	6	6	6	Yes	26
RFK8-LED-9640-A	14029	LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, 96-Watts 4000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
RFK8-LED-9650	14014	LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, 96-Watts 5000K, Adjustable Width: 4.25" to 5".	EA	1	BX	6	6	6	Yes	26
RFK8-LED-9650-A	14015	LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, 96-Watts 5000K, Adjustable Width: 4.25" to 5". Includes Snap On Frosted Diffuser	EA	1	BX	6	6	6	Yes	26
<b>LED RetroFit Conversion Kits Using T8 LED Lamps</b>										
RFK4-T8LED-L1	14008	T8 LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, one (1) Lamp, Adjustable Width: 4.25" to 5"	EA	1	BX	6	6	6	Yes	19
RFK4-T8LED-L2	14010	T8 LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, two (2) Lamp, Adjustable Width: 4.25" to 5"	EA	1	BX	6	6	6	Yes	19
RFK4-T8LED-L3	14009	T8 LED RetroFit Conversion Kit: for 4-FT Strip Fixture Housing, three (3) Lamp, Adjustable Width: 4.25" to 5"	EA	1	BX	6	6	6	Yes	19
RFK8-T8LED-L2	14012	T8 LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, two (2) Lamp, Adjustable Width: 4.25" to 5"	EA	1	BX	6	6	6	Yes	19
RFK8-T8LED-L4	14011	T8 LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, four (4) Lamp, Adjustable Width: 4.25" to 5"	EA	1	BX	6	6	6	Yes	19
RFK8-T8LED-L6	14013	T8 LED RetroFit Conversion Kit: for 8-FT Strip Fixture Housing, six (6) Lamp, Adjustable Width: 4.25" to 5"	EA	1	BX	6	6	6	Yes	19
<b>LED RetroFit Conversion Kit Accessories/Options</b>										
RFK-TOOL	14019	LED RetroFit Conversion Kit Installation Tool	EA	1	BG	2	2	2	Yes	1
RFK4-LENS	14039	Replacement Frosted Acrylic Diffuser: for 4-FT Strip Fixture	EA	1	BX	6	6	6	Yes	11
RFK8-LENS	14038	Replacement Frosted Acrylic Diffuser: for 8-FT Strip Fixture. Includes two (2) 4-FT Diffusers jointed together by two (2) Tinnerman Clips	EA	1	BX	6	6	6	Yes	11

## UNITS OF MEASURE KEY

Order Unit: The Unit to be ordered; Order Qty: Number of pieces in each Unit; Unit Pkg: Packaging types - BG (Bag), BX (Box), BN (Bulk); Units/Case: Unit packages contained in the Case; TL Case Qty: The total number of items in each Master Case; Min Order Qty: The smallest Unit that can be ordered; MM Req: Must order multiples of the Unit in the stated quantities; Ship Wt (Lbs): Total weight of the units per carton

Specifications subject to change without prior notice.

# LED RETROFIT CONVERSION KITS

## PHOTOMETRICS FOR LED RETROFIT CONVERSION KITS

### LED RetroFit Conversion Kit - LED Strip without Diffuser

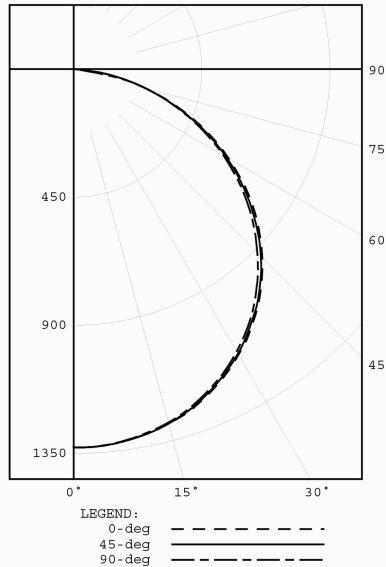
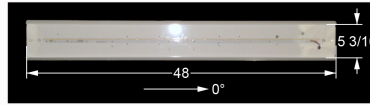
CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	1329	1329	1329	1329	1329	
5	1325	1325	1326	1326	1325	126
15	1289	1282	1289	1289	1285	363
25	1213	1199	1208	1209	1202	556
35	1094	1081	1088	1084	1079	679
45	937	928	930	918	912	713
55	742	735	730	721	716	651
65	512	509	503	495	493	496
75	265	262	260	260	260	276
85	50	56	4	5	5	44
90	0	1	0	0	0	
95	0	0	0	0	0	0
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

ZONAL LUMEN SUMMARY	
ZONE	LUMENS
0- 30	1045
0- 40	1724
0- 60	3088
0- 90	3904
90-120	0
90-130	0
90-150	0
90-180	0
0-180	3904

%FIXT
26.8
44.2
79.1
100.0
0.0
0.0
0.0
0.0
100.0

EFFICACY = 113.8 lm/W  
CIE TYPE - DIRECT  
PLANE : 0-DEG 90-DEG  
SPACING CRITERIA : 1.29 1.28  
BEAM ANGLE (50%) : 116.8 X 114.7 DEGREES  
FIELD ANGLE (10%) : 161.5 X 158.5 DEGREES



### Luminaire Quality Metrics LM-79 Report

EPCO's LM-79 Report captures the LED RetroFit Conversion Kit's overall electrical characteristics and photometric measurements (lumen output) performance. This report is a snapshot of spatial distribution of light and color attributes under specified operating conditions. This report does not address lifetime ratings for this LED RetroFit Conversion Kit, or changing performance over time (e.g., lumen maintenance).

Most important, EPCO's LM-79 data is intended to provide you with objective retrofit product evaluation comparisons relative to the LED RetroFit Conversion Kit's performance requirements, and is required by voluntary labeling programs such as LED Lighting Facts.

### LED RetroFit Conversion Kit with Diffuser

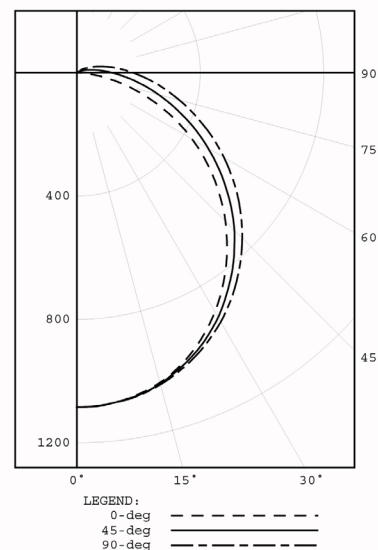
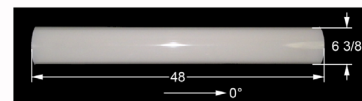
CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	1084	1084	1084	1084	1084	
5	1080	1080	1080	1080	1080	103
15	1040	1035	1044	1048	1047	294
25	953	947	967	977	978	444
35	829	830	855	874	880	534
45	681	688	722	749	758	555
55	517	529	570	608	622	509
65	345	364	416	463	480	410
75	173	208	273	326	344	282
85	31	84	158	210	229	161
90	0	44	113	163	181	
95	0	21	78	123	140	81
105	0	4	33	65	78	38
115	0	0	11	29	37	15
125	0	0	3	10	14	5
135	0	0	1	2	4	1
145	0	0	0	0	1	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

ZONAL LUMEN SUMMARY	
ZONE	LUMENS
0- 30	841
0- 40	1375
0- 60	2439
0- 90	3292
90-120	135
90-130	139
90-150	141
90-180	141
0-180	3433

%FIXT
24.5
40.1
71.0
95.9
3.9
4.1
4.1
4.1
100.0

EFFICACY = 100.1 lm/W  
CIE TYPE - DIRECT  
PLANE : 0-DEG 90-DEG  
SPACING CRITERIA : 1.23 1.28  
BEAM ANGLE (50%) : 107.0 X 121.3 DEGREES  
FIELD ANGLE (10%) : 158.1 X 199.3 DEGREES



LM-80 and TM-21 Reports  
available upon request!

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### **LED RetroFit Conversion Kit for LED Warranty**

Engineered Products Company (herein known as EPCO) warrants at its sole option after a failure is confirmed as a true defect in materials or workmanship, EPCO will replace, or refund, any LED RetroFit Conversion Kit for a period of five (5) years (50,000 hours, minimum at  $L_{70}$ ). This warranty statement applies to the original purchaser and is not transferable. Note: The Original Purchaser is identified as the Building Owner.

To obtain a replacement LED RetroFit Conversion Kit, or to obtain a credit memo under this warranty, the Purchaser must contact Engineered Products Company within the specified warranty period to obtain a Return Materials Authorization (RMA) form and return shipping instructions. Engineered Products Company shall have no responsibility for any LED RetroFit Conversion Kit deemed "out of warranty". Under no circumstances shall Engineered Products Company be liable for any loss or damage, whether direct or indirect, incidental, consequential, special or otherwise, arising out of or relating to the use of, or the inability to use the LED RetroFit Conversion Kit in excess of the cost for replacement of any LED RetroFit Conversion Kit proven to be defective during the warranty period.

**THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR ANY CLAIM, WHETHER IN CONTRACT, TORT, OR OTHERWISE, AND IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY OF NONINFRINGEMENT OF THE INTELLECTUAL PROPERTY RIGHT OF THIRD PARTIES. ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.**

### **The Warranty Does Not Apply To Any Of The Following Conditions:**

- Any LED RetroFit Conversion Kit that has been incorrectly installed by drilling holes, puncturing, piercing or any other means that will alter the integrity of this kit.
- Damage caused by the use of parts, components, and/or other equipment(s) that is not compatible, suitable, and/or authorized by EPCO for use with its LED RetroFit Conversion Kit.
- Damage resulting from use of the LED RetroFit Conversion Kit in what EPCO, at its sole discretion, considers extreme applications.
- Product damage as determined by EPCO to be caused by a crash, impact, or obvious signs of abuse to the LED RetroFit Conversion Kit.
- There are no charge-backs for any type of labor allowance required to remove, re-install, or re-power the LED RetroFit Conversion Kit; or for the removal of the defective LED RetroFit Conversion Kit and/or replacement with a new kit.

### **This Warranty is Considered Invalid When One or More of the Following Conditions Occur:**

- Disassembly of LED Driver or LED Strip by the end-user.
- Severe damage or deformation of the LED Driver or LED Strip appearance.
- Damage to the LED Driver or LED Strip input or output wires.
- LED Driver's identification codes or serial numbers have been erased, altered or damaged.
- Damage to the LED Driver or LED Strip caused by natural disasters.

## LED RETROFIT CONVERSION KITS

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### **LED RetroFit Conversion Kit Using T8 LED Lamps Warranty**

Any EPCO T8 LED RetroFit Conversion Kits using Owner, Contractor, and/or Installer supplied T8 LED Tubes, warrants at its sole option after a failure is confirmed as a true defect in materials or workmanship, EPCO will replace, or refund, any T8 LED RetroFit Conversion Kit for a period of one (1) year.

This warranty statement applies to the original purchaser and is not transferable. Note: The Original Purchaser is identified as the Building Owner.

To obtain a replacement LED RetroFit Conversion Kit, or to obtain a credit memo under this warranty, the Purchaser must contact Engineered Products Company within the specified warranty period to obtain a Return Materials Authorization (RMA) form and return shipping instructions. Engineered Products Company shall have no responsibility for any LED RetroFit Conversion Kit deemed "out of warranty". Under no circumstances shall Engineered Products Company be liable for any loss or damage, whether direct or indirect, incidental, consequential, special or otherwise, arising out of or relating to the use of, or the inability to use the LED RetroFit Conversion Kit in excess of the cost for replacement of any LED RetroFit Conversion Kit proven to be defective during the warranty period.

**THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR ANY CLAIM, WHETHER IN CONTRACT, TORT, OR OTHERWISE, AND IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY OF NONINFRINGEMENT OF THE INTELLECTUAL PROPERTY RIGHT OF THIRD PARTIES. ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.**

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